UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,995	06/29/2006	Takue Tsuji	21713-00029-US1	5797

30678 7590 03/23/2009
CONNOLLY BOVE LODGE & HUTZ LLP
1875 EYE STREET, N.W.
SUITE 1100
WASHINGTON, DC 20006

EXAMINER	
SASTRI, SATYA B	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
03/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/584,995	TSUJI, TAKUE	
	Examiner	Art Unit	
	SATYA B. SASTRI	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/29/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *MSDS sheet*.

DETAILED ACTION

1. This office action is in response to application filed on 6/29/06. Claims 1-8 are now pending in the application.

Claim Objection

2. Claim 2 is objected to for the claim language. The claim may be amended for clarity to recite that the components are mixed at a maximum temperature of 140°C or less.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Imamura et al. (US 4,214,058) or Aoyoma (JP 05065370, English abstract, cited in the IDS) alone or in view of Mauer et al. (US 4,654,271) and further as evidenced by https://fscimage.fishersci.com/msds/95661.htm .

The Imamura et al. disclose vulcanizable rubber composition containing metal organic compounds. The composition affords excellent adhesive property when vulcanized in contact with metals and can be used for metal reinforced articles such as tire, belt, hose etc. The composition is obtained by compounding 100 parts of rubber with 0.5 to 10 parts of vulcanizing agents and 0.01 to 1 part by wt. (as metal content) of at least one metal compound selected from the class consisting of salts of titanium and molybdenum and organic complex compounds of titanium, molybdenum and cobalt. Rubber compositions comprising cobalt acetylacetonate is disclosed as one of the most preferable compounds for promoting adhesion with metal (abstract, col. 1, lines 7-10, col. 2, lines 23-28, col. 3, lines 43-68).

The prior art to Aoyama discloses tire formed from steel cords covered with a rubber composition comprising 0.1 to 0.6 part by wt. of cobalt acetylacetonate and 3-8 parts of sulfur. The rubber composition affords a combination of adhesion promoter and a desirable crosslinking system for tires (abstract).

The prior art fails to disclose the particle size of the cobalt acetylacetonate particles in the rubber composition.

While the primary reference to Imamura et al. or Aoyama is silent with regard to particle size of the cobalt acetylacetonate, both references teach the compound as adhesion promoting agent. Microparticles of the complex should exert a better influence on the adhesion characteristics because of their larger surface area as opposed to larger particles. Thus, one skilled in art would be motivated to utilize small particles of cobalt acetylacetonate, including particle sizes as presently claimed in the rubber compositions

Imamura et al. or Aoyama and thereby arrive at the presently cited claim, absent evidence of unexpected results.

In the alternative, the secondary reference to Mauer et al. which is in an analogous field of art concerning metal complexes useful as rubber/metal bonding promoters, suggests optimum particle size of metal complexes. For increasing the bond strength between metal and vulcanized rubber, the adhesion promoters that are high melting solids should be ground to a fine powder, preferably 70 micrometer particle size or less to ensure adequate dispersion (col. 5, lines 36-47). Thus, it would have been obvious to one of ordinary skill in the art to utilize cobalt acetylacetonate with a particle size less than 70 micrometers, including that within the presently claimed range and thereby arrive at the presently cited claims.

Evidence to the fact that cobalt II acetylacetonate is a high melting solid with a melting point of 172°C is provided in the MSDS.

With regard to claim 3, the secondary reference teaches that the adhesion promoter and the rubber component are effectively mixed in a Branbury mixer (col. 5, 35-47, col. 10, lines 1-5). It is the examiner's position that it would be within the level of ordinary skill in the art to optimize the mixing temperature depending on the melting temperature of the adhesion promoter and the Tg of the elastomer so as to achieve optimal dispersion.

Alternatively, the product claim that recites process by which the product is made is merely product by process claim and as such their process limitations do not impart patentability. Since the composition of the final product in the instant claim 3 is the same

product as that obtained from modified Imamura et al. or Aoyama, the claim is unpatentable even though the modified reference product is made by a different process. Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. See *In re Marosi,* 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112. The examiner can be reached on Mondays, Thursdays and Fridays, 7AM-5.30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. David Wu can be reached on 571-272-1114.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Satya B Sastri/

Examiner, Art Unit 1796